AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A method for ~~automated~~ convergence of an image projected by at least two modulators, the method comprising:

turning on a ~~grid pattern of~~ test pixel[[s]] in said projected image;

capturing an image of said test pixels ~~at an intersection of said grid pattern~~;

separating ~~each~~ said captured image into a separate image for each modulator;

~~selecting a test pixel in each of said separated captured images;~~

determining the x and y location ~~at center~~ of said test pixel[[s]]; and

~~using the x and y locations of one said test pixels of one separated image as a reference,~~ calculating the ~~x and y~~ convergence mis[[-]]alignment ~~for the test pixels~~ of the ~~other~~ separated images~~; and~~

~~repeating convergence procedure for at least one other location across the field of view of said projected image~~.

2. (Original) The method of Claim 1 whereby said projected image is generated by means of at least three spatial light modulators.

3. (Currently amended) The method of Claim 1 wherein said capturing an image step comprises:

capturing an image near ~~one of said captured test images is located in~~ the center of said projected image; and

capturing at least four additional ~~captured~~ images ~~are located~~ near the perimeter of said projected image.

4. (Original) The method of Claim 1 whereby average x and y pulses representing said test pixel's width and height are generated by taking at least 20 scans in both horizontal and vertical direction across said test pixel.

5. (Original) The method of Claim 4 whereby the pulse-height of said horizontal and vertical pulses is normalized to a maximum level.

6. (Original) The method of Claim 5 whereby said test pixel width and height is determined by measuring the width of said normalized pulses at the 90% amplitude level.

7. (Original) The method of Claim 1, said measuring and determining steps comprising:

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locating the 90% amplitude level of said pulse's leading edge;

locating the 90% amplitude level of said pulse's trailing edge; and

setting the center point as the mid-point between said 90% level of leading edge and 90% level of trailing edge.

8. (Original) A method for the automated focus of a projected image comprising the steps of:

forming a projected image having a grid pattern;

measuring a focus by:

capturing an image at an intersection of said grid pattern;

separating said captured image into single modulator images;

taking a fast-Fourier-transform using said single modulator images;

normalizing said fast-Fourier-transform data;

deriving a power spectrum array for said single modulator images from said normalized fast-Fourier-transform data; and

summing said power spectrum array elements to the right of the first relative minima in said spectrum;

adjusting optics used to form said projected image; and

repeating said steps to maximize said power spectrum summation.

9. (Original) The method of Claim 8 wherein:

one of said captured images is located in the center of said projected image; and

at least four additional captured images are located near the perimeter of said projected image.

10. (Currently amended) An apparatus ~~for the automatic convergence and focus of a projected image,~~ comprising:

an image capture device;

~~at least three CCD cameras operable to capture portions of a grid image;~~

~~a video multiplexer receiving an output from each of said CCD cameras;~~

~~a frame grabber receiving an output from said video multiplexer;~~ and

a ~~computer~~ processor receiving image data from said image capture device ~~frame~~

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~~grabber~~, said ~~computer~~ processor;

separating said captured image data into a separate image for each modulator used to [[~~for~~]] form said projected image; ~~and using said separated images for convergence and focus measurements.~~

taking a fast-Fourier-transform using data from said separated images;

normalizing said fast-Fourier-transform data;

deriving a power spectrum array for said separated images from said normalized fast-Fourier-transform data; and

summing said power spectrum array elements to the right of the first relative minima in said spectrum.

11. (Original) The apparatus of Claim 10 wherein one of captured images is located in the center of said projected image and at least four additional captured images are located near a perimeter of said projected image.

12-18. (Canceled)

19. (Currently amended) The method of Claim 10 [[~~18~~]] said processor ~~computer~~ determining an optimal focus of said projected image by repetitively measuring said focus and adjusting an optic use to project said image to maximize said power spectrum sum.

20. (New) A method for convergence of an image projected by at least two modulators, the method comprising:

turning on a test pixel in said projected image;

capturing an image of said test pixel;

separating said captured image into a separate image for each modulator;

determining the x and y location of said test pixel by normalizing said captured image and, in both the x and y directions;

locating a first location on a leading edge of said normalized captured image that exceeds a first threshold;

locating a second location on a trailing edge of said normalized captured image that fails to exceed a second threshold;

locating a third location on said trailing edge of said normalized

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captured image that exceeds a third threshold; and

averaging said first and third locations; and

calculating the convergence misalignment of the separated images.

21. (New) The method of Claim 20, said locating a first location comprising:

locating a first location on said leading edge of said normalized captured image that exceeds a 90% of a peak value for said normalized captured image.

22. (New) The method of Claim 20, said locating a second location comprising:

locating a second location on said trailing edge of said normalized captured image that fails to exceed 10% of a peak value for said normalized captured image.

23. (New) The method of Claim 20, said locating a third location comprising:

locating a third location on said trailing edge of said normalized captured image that exceeds a 90% of a peak value for said normalized captured image.

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